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## Description

This invention is concerned with the provision of a container adapted to dispense articles such as tablets, pills, sweets and so forth one at a time. Dispensing containers of this kind are very useful for dispensing sweetener tablets but for that purpose it is desirable that they should be small, that they are easy and reliable to use and inexpensive so that they can, if necessary, be given away.

In the light of the above we believe that a dispensing container of this kind should be designed so that it can be moulded in the minimum number of (say) two parts, so that it can be easily filled and assembled and so that it has a minimum of movable parts.

Several prior proposals have been put forward among which German Patent DE—A—3018041 may be mentioned. The disclosure in German Patent DE—A—3016834 forms the basis of the first part of the two part form of main claim covering this invention. In this connection it will be noted that the said German Patent provides a dispensing container for dispensing articles one at a time and having an inner element and an outer element with an article orienting member to align articles ready to be dispensed. An important feature of the present invention is that the article orienting member is at the bottom of the outer element and comprises a block with spaced ends and inwardly inclined top surfaces which lead to a channel extending substantially from end to end of the block, these being relatively small spaces at each side and at one end of the block and a larger space at the other end of the block, the dispensing opening being in the larger space.

Therefore in accordance with this invention there is provided a dispensing container for dispensing articles one at a time comprising an inner element, an outer element with an open top and a bottom wall, the outer element substantially enclosing the inner element when the two parts of the container are assembled, an article orienting member with surfaces sloping inwards to a channel which is adapted to receive and align articles ready to be dispensed one at a time, a projecting attachment on the inner element with a pocket therein to receive articles, a dispensing opening in the bottom wall of the outer element in alignment with the end of the channel which slopes downwards towards the dispensing opening, the said dispensing opening in the bottom wall of the outer element being so dimensioned that the projecting attachment can pass through the opening but in its normal inoperative mode is positioned so as to close the opening with the pocket communicating with the channel and spring means at the lower end of the inner element, the arrangement being such that when the inner element is pressed it is moved axially downwards relative to the outer element against the action of the spring means so that the projecting attachment is moved through the dispensing opening in the bottom wall of the outer element to dispense a single article from the pocket and at

the same time to close the end of the channel to prevent a second article being dispensed characterised in that the article orienting member is at the bottom of the outer element and comprises a block with spaced ends and inwardly inclined top surfaces which form the sloping surfaces and lead to the channel which extends substantially from end to end of the block, these being relatively small spaces provided at each side and at one end of the block and a larger space at the other end of the block, the dispensing opening being in the larger space and the pocket being dimensioned so as to receive only a single article.

In order that the invention may be more clearly understood reference is now directed to the accompanying drawings given by way of example in which:—

Figures 1, 2 and 3 are respectively a plan view, an end view and a side view of an assembled dispensing container according to the invention — and —

Figure 4 is a pictorial view showing the two parts of the dispensing container separately.

Referring to the drawings the dispensing container has two parts an inner element 1 and an outer element 2 which substantially encloses the inner element 1 except for a top section thereof which normally projects above the outer element.

The outer element 2 has side walls 3, end walls 4, a bottom wall 5 and an opening 6 at the top. The outer element also has internal retaining beads or ridges 7 on each end wall 4 and an orienting member 8 at the bottom. The orienting member 8 is in the form of a block with inclined top walls or surfaces 9 sloping inwards to a channel 10 extending substantially from end to end of the block spaces 11 being left at each side and at one end of the block and a larger space 12 at the other end of the block. An opening 13 is provided in the bottom wall 5 in the space 12, the opening 13 being in alignment with the end of the channel 10 in the orienting member 8 which slopes downwards towards opening 13.

The inner element 1 has sidewalls 14, end walls 15, a top 16 and is open at the bottom. Two bowed leaf springs 17 are provided at the bottom of sidewalls 14 and at one end the element 1 has a projecting attachment 18 with a pocket 19 in the part 20 that extends below the bottom of the element 1. External projecting beads or ridges 21 are provided at each end wall 15 for co-operation with the beads or ridges 7.

The two elements are preferably moulded from a suitable plastics material such as polypropylene but may if desired be made in any other suitable way and of any other suitable material. The end walls at least should be suitably resilient to allow the beads or ridges 21 to pass the beads or ridges 7 when the elements are being assembled and (if desired) disassembled. The precise shape and size of the container does not matter but we have found that the small flat pack shown is practical and convenient for pocket or purse. The channel 10 is shaped to receive the articles to be dispensed which in this case will be flat disc-shaped

sweeteners. If spherical pills are to be dispensed the channel 10, pocket 19 and opening 13 would all be modified to suit.

In operation the inner element 1 will be turned upside down compared with the position shown in Figure 4 and the element will be at least partially filled with articles through what has been described as the open bottom. With the element 1 still in the inverted position, the element 2 is then assembled over the element 1 and the assembled dispensing container may be returned to the position shown in Figures 1, 2 and 3. When in this position the beads or ridges 21 are disposed below the beads or ridges 7 to retain the elements 1 and 2 in assembled position, the springs 17 are disposed in the spaces 11, and the attachment 18 is disposed in the space 12 with the bottom of the attachment in or over the opening 13 so as to close the opening and with the pocket 19 in alignment with the end of the channel 10. Gentle shaking of the dispenser will then cause articles to align themselves along the channel 10 and one article will enter the pocket 19 by rolling downwards. In this connection care must be taken to make the pocket of the correct size and shape to ensure that the whole of one article can enter the pocket and at the same time prevent a second article from partially leaving the channel. To dispense an article the projecting part of the inner element 1 is depressed against the pressure of the springs 17, this causes axial movement of the entire element 1 relatively to the element 2 so that the attachment 18 moves down through the opening 13 in the element 2 until the pocket 19 is uncovered and the single article in the pocket is dispensed. At the same time the upper part of the attachment or the wall 15 will cover the end of the channel to prevent a second article from being dispensed.

When pressure on the top of the element 1 is released the springs move the element 1 back to its original position and another article enters the pocket 19 ready to be dispensed on the next depression of the element 1.

The new dispenser is simple and inexpensive, can be relatively flat and small and can easily be operated by one hand. We have therefore provided a two part dispensing container in which axial movement of one part relatively to the other part moves a dispensing attachment from a feed position in which a single article to be dispensed can enter a pocket in the attachment from an orienting channel 1 in the dispenser to a dispensing position in which the article in the pocket is dispensed and the connection between the channel and the pocket is closed.

The pocket 19 may have a bottom that slopes downwardly from the inside towards the outside i.e. away from the dispenser to assist an article to leave the pocket as soon as the element 1 is depressed.

#### Claims

1. A dispensing container for dispensing

articles one at a time comprising an inner element (1), an outer element (2) with an open top (6) and a bottom wall (5), the outer element (2) substantially enclosing the inner element (1) when the two parts of the container are assembled, an article orienting member (8) with surfaces (9) sloping inwards to a channel (10) which is adapted to receive and align articles ready to be dispensed one at a time, projecting attachment (18) on the inner element (1) with a pocket (19) therein to receive articles, a dispensing opening (13) in the bottom wall (5) of the outer element (2) in alignment with the end of the channel (10) which slopes downwards towards the dispensing opening (13), the said dispensing opening (13) in the bottom wall (5) of the outer element (2) being so dimensioned that the projecting attachment (18) can pass through the opening (13) but in its normal inoperative mode is positioned so as to close the opening (13) with the pocket (19) communicating with the channel (10) and spring means (17) at the lower end of the inner element (1), the arrangement being such that when the inner element (1) is pressed it is moved axially downwards relative to the outer element (2) against the action of the spring means (17) so that the projecting attachment (18) is moved through the dispensing opening (13) in the bottom wall (5) of the outer element (2) to dispense a single article from the pocket (19) and at the same time to close the end of the channel (10) to prevent a second article being dispensed characterised in that the article orienting member (8) is at the bottom of the outer element (2) and comprises a block with spaced ends and inwardly inclined top surfaces which form the sloping surfaces (9) and lead to the channel (10) which extends substantially from end to end of the block, these being relatively small spaces provided at each side and at one end of the block and a larger space at the other end of the block, the dispensing opening being in the larger space and the pocket being dimensioned so as to receive only a single article.

2. A dispensing container according to claim 1 wherein a top section of the inner element normally projects above the outer element.

3. A dispensing container according to claim 1 wherein the outer element has end walls with means internally thereof on each end wall for retaining in place the inner element.

4. A dispensing container according to any of the preceding claims wherein the overall configuration of the dispensing container takes the form of a small flat pack.

5. A dispensing container according to claim 1 wherein the channel (10) is specially shaped to receive the articles to be dispensed.

6. A dispensing container according to claim 3 characterised in that the inner element (1) has side walls (14), end walls (15), a top (16) and is partially open at the bottom and wherein a plurality of bowed leaf springs (17) are provided at the bottom of the side walls (14), one end of the inner element (1) being provided with the project-

ing attachment (18) which has a pocket (19) in a part (20) that extends below the bottom of the inner element (1), external retaining means (21) being provided on each end wall (15) of the inner element (1) for cooperation with the external retaining means on the outer element (2).

7. A dispensing container according to claim 1 wherein the dispenser contains articles to be dispensed.

#### Patentansprüche

1. Abgabebehälter für das einzelne Abgeben von Gegenständen, bestehend aus einem Innenelement (1), einem Außenelement (2) mit einer offenen Oberseite (6) und einer Bodenwand (5), wobei das Außenelement (2) im wesentlichen das Innenelement (1) umschließt, wenn die beiden Teile des Behälters zusammengesetzt sind, einem Gegenstandsausrichtelement (8) mit Flächen (9), die nach innen zu einem Kanal (10) geneigt sind, der Gegenstände aufzunehmen und auszurichten vermag, die bereit zur einzelnen Abgabe sind, einer vorstehenden Zusatzeinrichtung (18) an dem Innenelement (1) mit einem darin vorgesehenen Fach (19) zur Aufnahme von Gegenständen, einer Abgabeöffnung (13) in der Bodenwand (5) des Außenelements (2), die mit dem Ende des Kanals (10) fluchtet, der nach unten in Richtung auf die Abgabeöffnung (13) geneigt ist, wobei die Abgabeöffnung (13) in der Bodenwand (5) des Außenelements (2) so dimensioniert ist, daß die vorstehende Zusatzeinrichtung (18) durch die Öffnung (13) zu treten vermag, jedoch in ihrer normalen Nichtbetriebsstellung so angeordnet ist, daß sie die Öffnung (13) mit dem mit dem Kanal (10) kommunizierenden Fach (19) und eine Federanordnung (17) im unteren Ende des Innenelements (1) verschließt, wobei die Anordnung derart getroffen ist, daß beim Drücken des Innenelements (1) dieses axial nach unten relativ zu dem Außenelement (2) gegen die Wirkung der Federanordnung (17) derart bewegt wird, daß die vorstehende Zusatzeinrichtung (18) durch die Abgabeöffnung (13) in der Bodenwand (5) des Außenelements (2) bewegt wird, um einen einzigen Gegenstand aus dem Fach (19) abzugeben und gleichzeitig das Ende des Kanals (10) zu schließen, um die Abgabe eines zweiten Gegenstands zu verhindern, dadurch gekennzeichnet, daß das Gegenstandsausrichtelement (8) an dem Boden des Außenelements (2) vorgesehen ist und einen Block mit beabstandeten Enden und nach innen geneigten oberen Flächen aufweist, welche die geneigten Flächen (9) bilden und zu dem Kanal (10) führen, der sich im wesentlichen von einem Ende zu dem anderen Ende des Blocks erstreckt, wobei diese relativ kleinen Räume, die an jeder Seite und an einem Ende des Blocks vorgesehen sind, einen größeren Raum an dem anderen Ende des Blocks darstellen, wobei die Abgabeöffnung in dem größeren Raum ist und das Fach derart dimensioniert ist, daß es nur einen einzigen Gegenstand aufnimmt.

2. Abgabebehälter nach Anspruch 1, dadurch

gekennzeichnet, daß ein oberer Abschnitt des Innenelements normalerweise über das Außenelement vorsteht.

3. Abgabebehälter nach Anspruch 1, dadurch gekennzeichnet, daß das Außenelement Endwände mit im Inneren von diesen angeordneten Einrichtungen an jeder Endwand zum lagerechten Halten des Innenelements aufweist.

4. Abgabebehälter nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, daß die Gesamtkonfiguration des Abgabebehälters die Form einer kleinen flachen Packung hat.

5. Abgabebehälter nach Anspruch 1, dadurch gekennzeichnet, daß der Kanal (10) speziell gestaltet ist, um die abzugebenden Gegenstände aufzunehmen.

6. Abgabebehälter nach Anspruch 3, dadurch gekennzeichnet, daß das Innenelement (1) Seitenwände (14), Endwände (15) und einen Deckel (16) besitzt und teilweise an dem Boden offen ist und daß eine Vielzahl von gebogenen Blattfedern (17) an dem Boden der Seitenwände (14) vorgesehen sind, wobei ein Ende des Innenelements (11) mit der vorstehenden Zusatzeinrichtung (18) versehen ist, welche ein Fach (19) in einem Abschnitt (20) aufweist, das sich unterhalb des Bodens des Innenelements (1) erstreckt, wobei äußere Haltemittel (21) an jeder Endwand (15) des Innenelements (1) für das Zusammenwirken mit den äußeren Haltemitteln an dem Außenelement (2) vorgesehen sind.

7. Abgabebehälter nach Anspruch 1, dadurch gekennzeichnet, daß der Abgabebehälter abzugebende Gegenstände, enthält.

#### Revendications

1. Conteneur-distributeur pour distribuer des articles par un à chaque fois, comprenant un élément interne (1), un élément externe (2) avec une partie supérieure ouverte (6) et un fond (5), l'élément externe (2) enfermant à peu près l'élément interne (1) lorsque les deux parties du conteneur sont assemblées, un organe (8) d'orientation des articles avec des surfaces (9) inclinées vers l'intérieur vers un conduit (10) qui est adapté pour recevoir et aligner des articles prêts à être distribués par un à la fois, un appendice (18) en saillie fixé sur l'élément interne (1) avec une cavité interne (19) Pour recevoir des articles, une ouverture (13) de distribution dans le fond (5) de l'élément externe (2), alignée avec l'extrémité du conduit (10) qui s'incline vers le bas en direction de l'ouverture (13) de distribution, ladite ouverture (13) de distribution dans le fond (5) de l'élément externe (2) ayant des dimensions telles que l'appendice (18) en saillie puisse passer à travers l'ouverture (13) mais dans son mode normal inactif soit disposée de façon à fermer l'ouverture (13) avec la cavité (19) communiquant avec le conduit (10), et des moyens élastiques (17) à l'extrémité inférieure de l'élément interne (1), l'agencement étant tel que lorsque l'élément interne (1) est enfoncé il est déplacé axialement vers le bas par rapport à l'élément externe (2) à

l'encontre de l'action des moyens élastiques (17) de sorte que l'appendice (18) en saillie est déplacé à travers l'ouverture (13) de distribution dans le fond (5) de l'élément externe (2) pour distribuer un article unique à partir de la cavité (19) et pour fermer en même temps l'extrémité du conduit (10) afin d'empêcher la distribution d'un second article, caractérisé en ce que l'organe (8) d'orientation des articles est situé au fond de l'élément externe (2) et est constitué par un bloc avec des extrémités espacées et des surfaces supérieures inclinées vers l'intérieur qui forment les surfaces inclinées (9) et conduisent au conduit (10) qui s'étend à peu près d'une extrémité à l'autre du bloc, des espaces relativement petits étant prévus sur chaque côté et à une extrémité du bloc et un espace plus grand à l'autre extrémité du bloc, l'ouverture de distribution étant située dans l'espace plus grand et la cavité ayant des dimensions aptes à recevoir seulement un article unique.

2. Conteneur-distributeur suivant la revendication 1, dans lequel une partie supérieure de l'élément interne fait normalement saillie au-dessus de l'élément externe.

3. Conteneur-distributeur suivant la revendication 1, dans lequel l'élément externe comporte des parois d'extrémité avec des moyens internes sur chaque paroi d'extrémité pour retenir l'élément interne en place.

4. Conteneur-distributeur suivant l'une quelconque des revendications précédentes, dans lequel la configuration de l'ensemble du conteneur-distributeur présente la forme d'un petit ensemble plat.

5. Conteneur-distributeur suivant la revendication 1, dans lequel le conduit (10) est conformé spécialement pour recevoir les articles devant être distribués.

6. Conteneur-distributeur suivant la revendication 3, caractérisé en ce que l'élément interne (1) comporte des parois latérales (14), des parois d'extrémité (15), une partie supérieure (16) et est partiellement ouvert à sa partie inférieure, et dans lequel plusieurs lames de ressort incurvées (17) sont prévues à la partie inférieure des parois latérales (14), une extrémité de l'élément interne (1) comportant un appendice (18) en saillie fixé sur elle, comportant une cavité (19) dans une partie (20) qui s'étend au-dessous de la partie inférieure de l'élément interne (1), des moyens externes (21) de retenue étant prévus sur chaque paroi d'extrémité (15) de l'élément interne (1) pour coopérer avec les moyens de retenue externes sur l'élément externe (2).

7. Conteneur-distributeur suivant la revendication 1, dans lequel le distributeur contient des articles devant être distribués.

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